

REPORT
ON THE
HEALTH OF ASTON MANOR

During the Year ending December 31st, 1899.

BY

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Assistants - - - - - { A. O. PURNELL, C.S.I.
C. J. HUMPHREYS, C.S.I.

Superintendent of Night-soil Department - A. TREADAWAY.

Resident Superintendent, Infectious Hospital - T. J. BLACK.

Medical Officer of Health - - - - FRANCIS H. MAY, D.P.H.
L.R.C.P. Lon., M.R.C.S. Eng.



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TO THE CHAIRMAN AND MEMBERS OF THE ASTON MANOR URBAN DISTRICT COUNCIL.

GENTLEMEN,

I have pleasure in presenting the following Report on the work of the Health Department of Aston Manor during the year 1899.

I am pleased to state that with the exception of the excessively high mortality from Infantile Diarrhœa, the past year has been a fairly healthy one. The most noticeable feature has been the continued diminution in the amount of Scarlet Fever in the district. Diphtheria has been present at times, with high mortality, and has called for special measures, attended with satisfactory results. Typhoid Fever has continued its hold upon the district, and has had much of my attention. Measles has been prevalent at times, and has also received attention.

Population.

The present estimated population of the Urban Sanitary District of Aston Manor, according to the average number of persons to each inhabited house at the last census, multiplied by the number of inhabited houses as enumerated by the Officers of the Aston School Board, is 80,310, and the mean population of Aston Manor for the year, calculated on this basis, amounts to 80,224. The acreage of the Manor is 943 acres.

The following is the number of houses and the population for the district at the last five census enumerations : --

Year.	Total Houses.	Houses Void.	Houses Building.	Inhabited Houses.	No. of Persons per inhabited House.	Population.	Density.
1851	1,437	105	23	1,309	4.9	6,426	6.8
1861	3,562	173	45	3,344	4.9	16,337	17.3
1871	7,662	651	83	6,928	4.9	33,948	36.0
1881	11,830	1,158	98	10,583	5.1	53,842	56.1
1891	14,689	653	147	13,889	4.9	68,639	72.7

The following Table gives the enumerations of the houses by the Aston School Board, and the population calculated therefrom:—

Year.	Total Houses.	Houses Void.	Houses Building.	Inhabited Houses.	Persons per House.	Estimated Population.	Density.
1893	15,638	749	12	14,877	4·9	72,979	77
1894	15,882	792	37	15,053	„	73,759	78
1895	16,100	717	23	15,360	„	75,264	80
1896	16,306	346	13	15,947	„	78,140	83
1897	16,438	130	43	16,265	„	79,698	84
1898	16,556	181	22	16,353	„	80,129	85
1899	16,687	293	2	16,392	„	80,320	85

It will be seen from these figures that although there is a considerable increase in the total number of houses in the district, the number occupied remains almost the same as last year, and the population has continued nearly stationary. At the same time the urgent demand for house accommodation, which was so marked a year ago, has abated, and the tendency to overcrowding has relaxed in consequence.

Births.

The number of births registered during the year was 2,521—namely, 1,303 males and 1,218 females—giving a birth rate per annum of 31·8. Compared with 29·26 for England and Wales for 1899, this is a fairly high one.

Deaths.

The number of deaths registered during the past year was 1,240, as compared with 1,214 during the previous year. 626 were males and 614 females. These deaths are classified under the several diseases from which they occurred, according to their ages, in the tables at the end of this Report.

The general death rate of this district for 1899 is 15·4 per thousand, which is slightly above that of 1898, but it compares favourably with the average of the last eight years, viz., 15·8. The death rate for England and Wales for 1899 was 18·3, and for Birmingham 20·5.

The zymotic mortality during the past year was 322, as compared with 233 in 1898. The zymotic death rate, calculated from the number of deaths for the year from the seven principal zymotic diseases, was 4.0 as compared with 2.9 for 1898, the average for the past eight years being 3.3. This increase is chiefly accounted for by the greater mortality this year from diarrhoeal disease, and in consequence of the epidemicity of this disease the zymotic death rate cannot be regarded as a good criterion of the general health of the district.

The following Table shows the number of deaths from each of the seven principal zymotic diseases:—

Seven Principal Zymotic Diseases.

Number of Deaths ... 322.

DISEASE.	1899		1898	
	Notified Cases	Deaths	Notified Cases	Deaths
Smallpox	—	—	—	—
Measles	—	11	—	27
Scarlet Fever	128	2	169	*3
Diphtheria and Memb. Croup	78	19	83	8
Typhoid Fever	185	32	108	16
Whooping Cough	—	31	—	11
Diarrhoea	—	227	—	168
Totals ...	391	322	360	233

*One other case died in Hospital and registered in Perry Barr, Staffordshire.

The infantile death rate, calculated on the rate which the deaths under a year bear to the births during the year, which is regarded as a valuable criterion of the sanitary condition of a town, was 194 per thousand born, which is slightly above the average of the past eight years. The infantile death rate of England and Wales for 1899 was 163.

The following Table shows the annual birth and death rates for Aston Manor since the last census; also the average for the two previous decades, and the eight years 1892-9.

	Birth Rate.	Death Rate.	Infantile Death Rate.	Zymotic Death Rate
Average of decade, 1872-81 ...	42'1	18'4	146	4'0
„ „ 1882-91 ...	34'1	16'1	145	2'7
„ 8 years, 1892-9 ...	32'3	15'8	177	3'3
Year 1892	32'5	16'4	152	2'6
„ 1893	33'5	16'7	187	3'6
„ 1894	31'0	14'0	136	2'1
„ 1895	33'1	16'5	191	3'1
„ 1896	31'5	15'4	172	3'5
„ 1897	32'8	17'0	200	4'8
„ 1898	31'6	15'1	186	2'9
„ 1899	31'5	15'4	194	4'0

Prevention of Disease.

Notification of Infectious Disease.

Notifications of 454 cases of infectious diseases were received from medical men during the past year, being 21 more than in the previous year. The fees for notifications for the year amounted to £56 4s., as compared with £53 6s. in 1898.

CASES OF INFECTIOUS DISEASES NOTIFIED IN EACH MONTH OF 1899.													
1899	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total.
Smallpox	—	—	—	—	—	—	—	—	—	—	—	—	—
Cholera	—	—	—	—	—	—	—	—	—	—	—	—	—
Diphtheria	4	4	4	2	1	10	6	2	10	10	11	4	68
Memb. Croup. ...	1	1	—	—	—	1	3	1	1	1	1	—	10
Erysipelas	8	5	6	1	6	6	6	3	4	4	6	7	62
Scarlet Fever ...	7	15	4	12	6	9	20	12	13	10	9	11	128
Typhus Fever	—	—	—	—	—	—	—	—	—	—	—	—	—
Typhoid Fever ...	13	16	15	9	6	7	3	8	19	16	41	32	185
Relapsing Fever ...	—	—	—	—	—	—	—	—	—	—	—	—	—
Simple Con. Fever	—	—	—	—	—	—	—	—	—	1	—	—	1
Puerperal Fever	—	—	—	—	—	—	—	—	—	—	—	—	—
Totals	33	41	29	24	19	33	38	26	47	42	68	54	454

During the past year your Medical Officer has obtained reports from the sanitary staff on 454 cases, and 204 notices have been sent to head teachers acquainting them of infectious diseases among school children; 308 houses were fumigated by burning sulphur after infectious disease, 304 lots of bedding and clothing disinfected at the apparatus, and 270 premises stripped and cleansed after the convalescence or removal of infectious cases; 53 cases of scarlet fever occurring in the district were admitted to your Infectious Hospital.

INFECTIOUS DISEASES NOTIFIED IN ASTON MANOR SINCE THE ADOPTION OF THE NOTIFICATION ACT IN 1890.									
YEAR.	Smallpox.	Diphtheria.	Membranous Group.	Erysipelas.	Scarlet Fever.	Typhoid Fever	Simple Con- tinued Fever.	Puerperal Fever.	Total.
1890 (^{Six} Months)	—	32	6	56	305	28	—	2	429
1891 ...	—	44	2	38	336	44	3	6	473
1892 ...	—	44	1	83	406	57	1	6	598
1893 ...	126	47	5	83	214	121	6	12	614
1894 ...	202	44	14	80	136	35	—	6	517
1895 ...	34	109	6	98	413	41	—	4	705
1896 ...	—	204	18	78	596	82	—	10	988
1897 ...	—	90	12	67	376	78	3	4	630
1898 ...	—	73	10	68	169	108	1	4	433
1899 ...	—	68	10	62	128	185	1	—	454
TOTALS	362	755	84	713	3,079	779	15	54	5,841

School Closure for Measles and Diphtheria.

Measles.

During the past year Measles has been less prevalent and fatal than in 1898. The information concerning it is supplied by the Attendance Officers of the Aston School Board, who furnish weekly returns of absentees from the various schools, and reports as to their subsequent visits are also sent in. During the illness the other children in the house are debarred from attending school, and neither they nor the sufferer are permitted to return until a certificate has been signed by the medical attendant or myself.

Although this arrangement has been systematically carried out in Aston Manor during the past twelve months, it has not always been sufficient to prevent the serious spread of Measles, when infecting such an aggregation of susceptible material as an infants' department presents. In such cases the only other available means of checking this fatal disease is the closing of the infected department for a short period. However divided in opinion educational authorities may be on the advantages of temporary closure, that of sanitary authorities is decidedly in its favour. This procedure has rarely met with objection here, and several departments have been closed for short periods, voluntarily, upon the recommendation of your Medical Officer of Health, under Art. 83A of the Education Code. This has rendered it unnecessary to resort to compulsory closure under Art. 88 of the Code.

The following is the text of Art. 83A and 88 of the Education Code which refer to school closure :—

ARTICLE 83.—A school must have met not less than 400 times a year.

(a) If a school claiming an annual grant for the first time has not been open for a whole year, or if a school has been closed during the year, under medical authority, or for any unavoidable cause, a corresponding reduction is made from the number of meetings required by this article.

ARTICLE 88.—The managers must at once comply with any notice of the Sanitary Authority of the district in which the school is situated, or any two members thereof, acting on the advice of the Medical Officer of Health, requiring them for a specified time, with a view to preventing the spread

of disease or any danger to health likely to arise from the condition of the school, either to close the school or to exclude any scholars from attendance ; but after complying they may appeal to the Department if they consider the notice to be unreasonable.

In February last, owing to the prevalence of Measles in connection with the Infants' Departments of the Anglesey Street Board School, and the St. Silas' School, Church Street, I visited the schools and had conferences with Mr. T. G. Pratt, Clerk to the Aston School Board, and with the manager of the St. Silas' Schools, and on February 21st I recommended the closing of the Infants' Department of each school for three weeks. In each case this was done, and in the following month I was able to report a considerable abatement of the disease in the district.

In December there was a considerable prevalence of this disease and of Whooping Cough in connection with St. Mary's Schools, Aston Brook. The returns for the week ending December 4th showed 24 cases of Measles and 14 of Whooping Cough among the infants. The Deputy Medical Officer of Health wrote to, and conferred with, the chairman of the managers, the Rev. Hugh Price, recommending him to close the Infants' Department, but he did not see his way to do so. Subsequent reports for Aston Manor (the schools border directly upon Birmingham) showed a considerable decrease, and as the Christmas holidays were close at hand it was not considered advisable to take any further steps.

The following Table shows the monthly number of deaths from Measles during the past year, which compares very favourably with the previous ones :—

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sep.	Oct.	Nov.	Dec.	Totals
1898	4	—	1	—	—	—	2	4	2	3	2	9	27
1899	3	3	1	—	—	1	—	2	—	—	—	1	11

Diphtheria and Membranous Croup.

There have been 68 cases of Diphtheria and 10 of Membranous Croup reported during the past year. I have continued to classify Membranous Croup with Diphtheria, as I consider it a symptomatic

description of that disease. I am of opinion that the disease is losing its grip of the district since it became epidemic in 1895-6, although two local outbreaks during the past year were of a very fatal nature, giving rise to much anxiety, and calling for special measures.

One outbreak occurred during July. The first four cases notified were next door to each other, and I visited the spot and ascertained that three attended the Infants' Department of the Vicarage Road Board Schools. Notices were forthwith sent to the head teachers, and the other children residing in the houses were kept from attending school. Several other cases afterwards occurred in infants who attended the same school, and I visited the properties, which I found fairly sanitary. As there was no prevalence of Diphtheria elsewhere, the schools appeared to be the medium by which the disease was being spread. In these circumstances I had a conference with Mr. T. G. Pratt, Clerk to the Aston School Board, and recommended that the Infants' Department be closed immediately in anticipation of the summer holidays. I afterwards received an official letter from him stating that the department was closed on July 26th. Altogether there were nine cases in six houses, with six deaths, which I refer directly to this outbreak. No case was notified in connection with these schools after August 4th.

Another serious outbreak occurred during October in connection with the Infants' Department of the St. Mary's Roman Catholic Schools, Brougham Street, and the Deputy Medical Officer of Health wrote to the managers of the schools recommending that the department in question be closed for three weeks, and gave a certificate to that effect, and the department was closed next day. Altogether seven cases in five houses, with four deaths, appeared to be directly connected with this outbreak, and no further case connected with these schools was reported after the department was closed.

Copies of our special reports on these outbreaks have been sent to the Local Government Board and the Warwickshire County Council, in accordance with Art. 15 of the Local Government Board's Orders, issued to Medical Officers of Health.

The following table shows the number of cases of Diphtheria and Membranous Croup notified in Aston Manor during the past six years, and the number of deaths registered, with the percentage of deaths to cases :—

Year.	No. of cases of Diphtheria reported.	No. of Infected Houses	No of Deaths Registered.	No. of Houses Stripped and Disinfected on Medical Certificate.	No. of lots of Clothing and Bedding Disinfected at Apparatus	Percentage of Deaths to Cases in Aston Manor.
1894	58	47	10	4	12	17·2
1895	115	85	35	37	46	30·4
1896	222	178	51	145	186	23·0
1897	102	88	15	46	66	14·7
1898	83	71	8	44	63	9·6
1899	78	64	19	47	59	24·4

During June arrangements were concluded and an agreement signed between Mason University College and this Council, for the bacteriological examination of throat secretions for Diphtheria at the Central Bacteriological Laboratory of the College, by which means medical men can avail themselves of a bacteriological examination (in doubtful cases) free of cost. The following is a copy of the circular letter which the Health Committee authorised me to send to the medical men of the district :—

ASTON MANOR URBAN DISTRICT COUNCIL.

COUNCIL HOUSE,

ASTON MANOR,

June, 1899.

DEAR SIR,

DIAGNOSIS OF DIPHTHERIA.

I beg to inform you that the ASTON MANOR URBAN DISTRICT COUNCIL have arranged with the COUNCIL of the MASON UNIVERSITY COLLEGE, BIRMINGHAM, for the Bacteriological Examination of Secretions or Membrane taken from the throats of patients supposed to be suffering from Diphtheria, and who reside in Aston Manor.

Medical Practitioners can obtain the necessary swabs, tubes, cases, etc., for the collection and despatch of the material to be examined, together with directions as to the proceedings to be followed in forwarding samples to MASON COLLEGE, on application to the Caretaker, COUNCIL HOUSE, ALBERT ROAD, ASTON, or to the Secretary of the MASON UNIVERSITY COLLEGE, BIRMINGHAM.

No charge will be made for the Examination, and in the event of Diphtheria Bacilli being found in the material sent, the fact will at once be notified to the Medical Practitioner by telegram; on the other hand, if the result is a negative one, he will receive a communication by post to that effect.

Yours faithfully,

FRANCIS H. MAY,

Medical Officer of Health,

The College Authorities keep a register of cases and results of examinations, and send a copy of each result to the Medical Officer of Health of the contracting district. From June 27th to December 31st, 1899, five specimens for bacteriological examination have been sent to Mason University College from Aston Manor, and in each case a negative result was reported. The arrangements have not been in operation long enough in this district to call for any comment.

Scarlet Fever.

This disease has shown marked diminution in the district during the past two years. Altogether 128 cases have been notified in 1899, with only two deaths, the small mortality indicating the mildness of the type of the disease.

The percentage of deaths to cases was 1·5 per cent., as compared with 2·4 per cent. in 1898, and 3·7 per cent. in 1897, and with 3·7 per cent. of the notified cases in the large towns of England and Wales in 1898.

Of the 128 cases notified during the year, 53 were isolated at your Hospital, equal to 41 per cent., and although this is a slightly better percentage than last year, when it was as low as 35 per cent., I regret that hospital isolation is not more widely adopted in this district, as it not only limits the outbreak generally to the first case, and enables the other children of the household to resume attendance at school, but it leaves the breadwinner of the family at liberty to continue his occupation with safety. The friends, too, have the satisfaction of knowing that the child is better nursed, and has more freedom in the wards and grounds of a hospital situated in the country, than when confined in an attic or a room in a small tenement house.

I regard this disease, which is endemic in this district and has several times been epidemic, as a most treacherous complaint, owing to the difficulties that occasionally occur in the early diagnosis of mild cases, their infectivity and liability to severe complications, and to the uncertainty as regards freedom from infection except after prolonged isolation. It is not from the well defined or bad cases that this disease is spread; they are generally carefully isolated at home or in hospital; but it is from the mild ones, which receive less attention from parents or friends, or may

even be overlooked, in which case the sufferer continues attendance at school, when it is inevitable that a disease to which children of school age are so susceptible will spread. This all tends to increase the difficulty in arresting the spread of the disease, and shows the inadvisability of attempting treatment at home when a suitable hospital is available for the purpose.

The following Table shows the ages at which the cases of, and deaths from, this disease occurred during the past three years :—

	1897.		1898.		1899.	
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.
Under 5 years	115	6	53	2	41	1
From 5-10 „	146	4	63	—	46	1
„ 10-15 „	67	2	30	1	21	—
„ 15-20 „	26	2	13	—	9	—
At 20 and upwards	22	—	10	—	11	—
TOTALS ...	376	14	169	3*	128	2

**One other case died in Hospital and registered in Staffordshire.*

The following is a summary of the work done to prevent the spread of this disease :—

Year.	Cases of Scarlet Fever reported	Infected Houses.	Deaths registered, including those in Hospital.	Houses stripped and disinfected on Medical Certificate.	Lots of Clothing and Bedding disinfected at Apparatus.	Cases isolated in Hospital.	Percentage of Cases isolated.
1891	337	218	23	236	242	124	37
1892	406	293	13	288	295	92	22
1893	214	176	6	183	177	82	36
1894	136	93	5	81	93	38	28
1895	413	286	11	241	255	198	48
1896	596	446	22	460	486	257	43
1897	376	292	14	285	310	176	47
1898	169	144	4	153	164	59	35
1899	128	112	2	98	102	53	41

Smallpox.

I am pleased to report that Aston Manor has been free from any case of this disease for four years. On two occasions during the past year I have visited and consulted with medical practitioners in suspicious cases, but neither proved to be Smallpox.

The last outbreak of this disease in Aston Manor was in 1893, the previous one being in 1883, and as it generally becomes epidemic periodically, it is well to prepare, as we shall probably again have it in our midst in a year or so. I have referred to the existing accommodation for this disease under the heading of Isolation Hospital.

Erysipelas.

There have been 62 cases of this disease notified during the past year, and reports have been made to me on each case, but it has not been considered necessary to take any action. Only one death has occurred, and that in a person over 65 years of age.

Puerperal Fever.

No case has been notified, and no death has been attributed to this disease in the district during the past year.

Phthisis.

There were 78 deaths registered from this disease during the past year, as compared with 84 during 1898. This gives a mean annual death rate per thousand persons in Aston Manor of '97, compared with 1'34 for England and Wales in 1897.

Influenza.

This disease has been the cause of 18 deaths during the past year, as compared with 5 during the previous year. It was epidemic during the early portion of the year in a mild form.

Diarrhœal Disease.

The mortality from Diarrhœa during the past year shows no improvement on that recorded during the previous one, but is slightly in excess, as is shown by the following Table, which gives the number of deaths from Diarrhœal Diseases during the past three years :—

Year.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Totals.
1897	—	1	—	2	1	5	25	131	37	10	6	3	221
1898	2	—	—	3	1	11	24	51	56	15	4	1	168
1899	2	2	3	3	3	10	41	93	55	11	3	1	227

I have continued to include under the head of Diarrhœal Disease the deaths from gastro-intestinal catarrh, enteric catarrh, muco-enteritis, and gastro-enteritis. The 227 deaths were certified under the following names :—

	1897	1898	1899
Choleraic Diarrhœa	3	—	—
Diarrhœa	152	118	145
Gastro-intestinal Catarrh	22	16	20
Gastro-enteric Catarrh	4	—	5
Gastro-enteritis	40	34	47
Totals ...	221	168	227

The ages at which they occurred were as follows :—

	1897	1898	1899
Under 3 months	45	38	52
Between 3 and 6 months	54	42	75
„ 6 „ 9 „	47	38	44
„ 9 „ 12 „	33	25	21
„ 12 „ 15 „	19	9	9
„ 15 months and 2 years ...	11	3	16
„ 2 years and 5 years ...	8	2	3
Above 5 years... ..	4	11	7
Totals ...	221	168	227

The above totals represent, so far as I am able to judge, the extent of the mortality from epidemic Diarrhœa in Aston Manor,

and until recent years the deaths would all have been certified by the medical attendants under the term "Diarrhœa." For various reasons that name for the epidemic disease which proves so fatal among infants in hot weather has become to a large extent discarded, not only in Aston Manor but generally, and unauthorised and unsatisfactory terms, such as "gastro-enteritis," are employed instead. This custom has had the attention of the Royal College of Physicians, London, who are the recognised authority upon the nomenclature of disease, and with the approval of the Medical Officer to the Registrar-General (Dr. Tatham), they recommend the entire disuse of such terms as "gastro-enteritis," "muco-enteritis," "gastric catarrh," etc., as synonyms of epidemic Diarrhœa. If any other term be used they authorise the term "epidemic enteritis," or, if preferred, "zymotic enteritis" instead.

The mean annual death rate per thousand from Diarrhœal Diseases alone in Aston Manor for the past three years was as follows :—

1897	...	2·77
1898	...	2·09
1899	...	2·83

I consider the prevalence of autumnal infantile Diarrhœa is in a great measure due to the prolonged autumn high temperature, which is favourable to the propagation of the organisms of this disease otherwise latent in the soil round dwelling houses. These organisms will not be exterminated unless the areas around houses are paved and periodically cleansed, and w.c.'s substituted for the privies and middens; and even then a few colder seasons may be necessary for the natural death of these microbes, which cling tenaciously to life in the soil surrounding houses in the older midden towns. It would, I think, be advisable next summer to issue a notice or hand-bill recommending cleanliness on the part of householders, the frequent swilling of back yards, and the inadvisability of throwing animal or vegetable matter on the yards, or slops into the middens, thus polluting the soil and air in the immediate neighbourhood.

Typhoid Fever.

Aston Manor, in common with the rest of the country, has suffered from an increased prevalence of Typhoid Fever during the year.

There were in all 185 cases notified, and 32 deaths registered in the district, 171 houses being infected by the disease, of which 73 had water closets and 98 had privies and middens attached to them.

The following Table shows the monthly number of cases of Typhoid Fever notified during the past two years.

Year.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sep.	Oct.	Nov.	Dec.	Total.
1898	7	11	11	14	11	—	1	4	8	21	8	12	108
1899	13	16	15	9	6	7	3	8	19	16	41	32	185

The following Table gives the age distribution of the cases :—

								1899.
Under	5	years	...	...	...	...	...	9
5	to	15	„	...	...	...	...	40
15	to	25	„	...	...	...	...	63
25	to	45	„	...	...	...	...	63
45	to	65	„	...	...	...	...	10
65	years and upwards			...	...	..	...	—
Total				...	...	...	...	185

Strict investigation was made relative to the sanitary condition of the premises in every case of Typhoid Fever ; each house in which a case was reported was inspected by myself or deputy, as well as by one of the sanitary staff, but so far I have failed to find any centre of infection or common factor to account for the increased prevalence of the disease towards the close of the year. The milk supply, being varied in almost every case, had to be disregarded. In no instance was well water used. Steps were taken at once for the abatement of nuisances found on the premises, and on the

removal or recovery of the patient disinfection of the contents of the room was carried out, followed by the cleansing and lime-washing of the room.*

Public Vaccination.

The Vaccination Act of 1898 has been in force in this district twelve months, and I am pleased to say that domiciliary vaccination with glycerinated calf lymph has been fairly well received in the homes of Aston Manor; in time I think it will become even more popular, and one-mark vaccination with humanised lymph will soon become as unpopular as it is inefficient.

Disinfection.

A new steam disinfector, with pure and impure rooms, is included in the plans of the new Refuse Destructor scheme, to be erected at Chester Street, the loan for which, amounting to £13,815, has been recently sanctioned by the Local Government Board. Mr. Treadaway has supplied me with the following return of the amount of disinfection done during the past three years for this and other districts :—

Districts.	1897.		1898.		1899.	
	Lots	Articles	Lots	Articles	Lots	Articles
Aston Manor	438	4,834	323	3,489	307	3,152
Handsworth	194	2,741	95	1,319	130	1,609
Erdington and Castle Bromwich	34	557	32	521	19	279
Sutton Coldfield	15	117	8	113	10	145
Perry Barr	—	—	—	—	1	51
Private	1	8	6	46	4	15
TOTAL	682	8,257	464	5,488	471	5,251

Inquests.

From the weekly returns of the deaths registered in the district, furnished by Mr. George Ingall, Registrar of Births and Deaths for Aston Manor, it appears that 30 deaths were registered by him as uncertified, as compared with 48 in 1898. Also, that 39 inquests have been held by the Coroner during the year, as compared with 39 during 1898 and 25 in 1897.

*At the date of concluding this Report a satisfactory diminution is shown in the number of cases notified.

Mortuary.

Mr. H. A. Walker, the Superintendent of Police, reports that there were 36 bodies deposited at the Mortuary during the past year, and 23 post-mortem examinations made. There were 25 bodies deposited there during 1898, and 7 during 1897.

Sanitary State of the District.

I am again able to report that the sanitary condition of the district has improved, all new houses built being through houses with water closets, and the movement in favour of the substitution of w.c.'s for privies and middens is continued under the able and zealous supervision of Mr. Bolt, the Inspector of Nuisances, and I have given advice where my attention has been required concerning these reconstructions.

The following Table shows the number of w.c.'s substituted for privies and middens, also the number of new w.c.'s since 1890, as supplied me by your Surveyor.

Year.		W.C.'s Substituted.		New W.C.'s.
1890	...	252	...	545
1891	...	251	...	419
1892	...	181	...	491
1893	...	259	...	355
1894	...	139	...	215
1895	...	164	...	262
1896	...	265	...	311
1897	...	204	...	84
1898	...	217	...	71
1899	...	218	...	77

Systematic House to House Visitation.

A house to house inspection of a portion of the district was made by your Inspector during the early part of the year, and I accompanied him to several of the properties. The street selected was Phillips Street, one of the oldest on the Manor.

Two large blocks of houses, which I visited, were in a very insanitary state. In 7 Court several of the houses were in a filthy and dilapidated condition, the plastering having fallen away, and the wall paper, in most cases very filthy, was hanging in shreds upon the walls, and the floors in each house were dangerous. The privies and

middens connected with these houses were also in a very offensive condition, and the houses themselves were almost inaccessible owing to the condition of the roadway leading to them. Notices were served upon the owners by your Inspector, and as a result the houses were cleansed and repaired, and the privies and middens abolished, and w.c.'s and dry ashpits substituted for them, the matter of the roadway being referred to your Surveyor.

In Sydenham Buildings fifteen houses were found in bad condition. The roofs were defective, the privies and middens dilapidated, and some of the yard drains offensive. Your Inspector met the owner upon the property, and he consented to do all the necessary work, and the houses were subsequently made thoroughly habitable, automatic flushing w.c.'s with dry ashpits were substituted for the privies and middens, and all the yard drains efficiently trapped.

The following Table shows the number of houses and the nuisances discovered in connection with them which have since been abated.

HOUSES.								
No. of Houses.	Class of Houses.		Water Supply.		Number of Water Closets.	Number of Dry Ashpits.	Number of Privies.	Number of Middens.
	Thro'.	Back to Back.	Tap.	Pump.				
235	183	52	235	—	44	31	147	108
NOTICES SERVED FOR NUISANCES DISCOVERED.								
Choked or defective Drains	Filthy Premises.	Dilapidated Buildings.	Defective Spouting.	Privies and Middens requiring reconstruction.	Insufficient Privy Accommodation	Animals kept so as to be a Nuisance.	Accumulations of Manure.	
12	34	22	11	10	4	4	4	

Twenty-seven privies and middens were abolished and replaced by w.c.'s and dry ashpits.

The street contains 11 factories and workshops, and these were also inspected. The sanitary accommodation in connection with these was fairly satisfactory.

New Sites and Buildings.

Building has proceeded apace in Aston Manor of late years, and as a consequence sites for houses are beginning to get scarce. Your Surveyor reports that during the past year plans have been approved of 95 houses, 125 other buildings, and 189 w.c.'s, and that 58 houses, 29 other buildings, and 77 w.c.'s were completed during that period. The buildings recently erected have not been entirely limited to those of the artisans' dwellings type, but include a new bank, higher grade schools, and a new hall.

The supervision over sites and buildings is a matter of great importance; this is well recognised by your Surveyor, Mr. H. Richardson, who has afforded me the opportunity of seeing plans, and I have conferred with him concerning them, and as to the advisability of approving plans for building on questionable sites.

On August 18th I attended the Local Government Board enquiry on the New Destructor Scheme, Firemen's Houses, and Cuckoo Road Bridge, held by H. Percy Boulnois, Esq., M.Inst.C.E., and gave evidence.

Offensive Trades.

Two manufactures of this nature have required attention this year. One was the Orient Cycle Tube Bending Company's works at 83, Clifford Street, which was alleged to be a nuisance owing to the effluvium from the boiling of resin used to fill hollow tubes for bending purposes, but I found on visiting the place that it had caught fire the day before, and as the company afterwards left the district, further action was rendered unnecessary.

The other case was that of a bone-boiling and digesting establishment for the making of bone manure, in Nursery Road, now called the City Bone, Tallow, and Charcoal Company. Several complaints were made of nuisances there, the most serious being from an owner of premises in Hunter's Road which adjoin the bone works, and are used by a brewer's chemist, who complained of swarms of insects, which he alleged to come from the bone works, infesting his property. I visited the place with your Inspector, Mr. Bolt, and Assistant Inspector, Mr. Purnell, and found it swarmed with insects, and upon examination of a large quantity of digested bones at the bone works stacked against the wall adjoining the complainant's property, I found the same kind of insects. I met the proprietor and advised the removal of the accumulated digested bones, and a notice was served upon him to do so. At a meeting of your Health Committee authority was given your Inspector to

issue a summons if the notice was not complied with, and your Clerk, Mr. J. Ansell, was instructed to write the Company to that effect, also requiring them not to allow digested bones to accumulate upon the premises in the future. The notice was ultimately complied with, since when your Inspector has made frequent visits of inspection, and has the matter still under observation.

Workshops and Bakehouses.

During the past year I have inspected all the workshops and bakehouses in this district in addition to the annual inspection already made by the Inspector of Nuisances, Mr. Bolt, who was appointed by you to inspect them when the Factories and Workshops Act of 1891 came into force. My object in making this inspection was to become acquainted with the interior of the workshops and bakehouses in the district, and to revise the register. I found them in a fairly sanitary condition, and generally with sufficient closet accommodation.

The register instituted in 1892, and giving particulars as to ownership, cubic space, ventilation, and sanitary accommodation, has had to be materially altered. The names of many workshops have had to be erased owing to their becoming void or having become factories by reason of employing motive power, and after revision the register contains 113 workshops and 76 bakehouses in actual use.

Her Majesty's Inspector of Factories and Workshops, S. H. Knyvett, Esq., in a recent letter to me, says: "There are no industries, so far as I have learnt during my inspection of many years in the Manor, which are particularly or essentially dangerous to health."

Slaughterhouses.

The number of private slaughterhouses in this district continues to diminish, only 30 now remaining on the register. These have been regularly visited by your Sanitary Inspector, and the necessary limewashing enforced.

I consider the policy you have taken during the past twenty years in opposing the erection of new private slaughterhouses a wise one in the interests of sanitation, and hope the time is not far distant when a public slaughterhouse or abattoir will be considered for this district, which should be followed by the discontinuance of the private ones.

One application for the erection of a new private slaughterhouse was made during last year. The plans were referred to me by your Surveyor, and after a conference with him and the architect I

reported to the Health Committee, advising them to refuse the application on the following grounds :—The present impossibility of efficient and uniform inspection of all slaughtering done in private slaughterhouses ; the large quantity of objectionable matter which gains entrance to the drains and blocks them ; the nuisance to those residing in the neighbourhood from the driving in of cattle, their lowing, and the squealing of pigs, before slaughtering ; the stench and swarms of flies from the close proximity of manure heaps to the slaughterhouse and neighbouring dwelling houses ; the want of proper lairage at sufficient distance from the slaughterhouse ; and the slaughtering of animals by novices, which frequently entails unnecessary cruelty. The Health Committee declined to recommend a license for its erection, and their decision was approved by the Council.

Dairies, Cowsheds, and Milkshops.

Your Inspector reports that 11 new milkshops have been added to the register during the year, but 20 have been removed therefrom, the sale of milk having been given up. There now remain 402 registered milkshops in the district, and these have been regularly visited at least twice during the year. In 23 instances, notices were served to cleanse milkshops, and all were complied with.

There are now no cowsheds on the register.

Overcrowding.

There have only been five instances in which the overcrowded condition of houses has been brought to my notice, and in each instance the overcrowding has been remedied after the sending of a preliminary notice under the Nuisances Clauses of the Public Health Act, 1875.

Isolation Hospital.

Owing to the diminution in the amount of Scarlet Fever in this and the several districts from which Aston Manor is under contract to remove cases, your Scarlet Fever Hospital, situated at Upper Witton, has not been fully taxed. The arrangements for the management and isolation at your Hospital are under the control of the Hospital Committee, whose meetings I have attended, and I have also acted as the medical attendant at the Hospital.

The walls of the permanent building have been cleaned and painted with three coats of paint, and the outside of the iron pavilion has also been painted. I cannot speak too warmly of the kindness and consideration I received from the Resident Superintendent (Mr. T. J. Black) and the Hospital Staff during my stay in Hospital while suffering from scarlet fever.

The following is a statement of the number of Scarlet Fever cases admitted, discharged, or died at the Hospital during the past three years, and the mortality per cent. on the admissions :—

SCARLET FEVER.			
	1897.	1898.	1899.
Number in Hospital on 1st day of year...	50	42	16
Admitted during year	234	97	70
Discharged	235	121	74
Died	7	2	—
Remaining at end of year	42	16	12
Mortality on number admitted	3%	2%	—

The following is the annual Table of all the cases admitted into Hospital from Aston Manor and from each of the contracting districts, including others admitted under special arrangement, since it was opened :—

TABLE OF ALL CASES ADMITTED INTO HOSPITAL.									
Year.	Aston Manor	Erdington	Castle Bromwich	Sutton.	Saltley	Birmingham	Workhouse.	Others.	Total.
1885	9	1	—	—	—	—	—	—	10
1886	14	1	—	—	—	—	—	—	15
1887	22	—	—	6	—	—	—	—	28
1888	17	7	—	23	—	—	17	2	66
1889	76	7	—	8	16	23	20	2	152
1890	160	44	—	8	9	20	24	1	266
1891	124	13	—	65	17	—	3	2	224
1892	92	8	—	7	—	—	11	2	120
1893	194	20	—	3	—	—	1	2	220
1894	208	31	—	7	—	—	4	3	253
1895	227	52	11	25	—	—	10	2	327
1896	257	75	5	55	3	15	2	—	412
1897	176	27	—	27	—	—	3	1	234
1898	59	12	4	13	—	—	4	5	97
1899	53	4	1	10	—	—	—	2	70
Totals	1,688	302	21	257	45	58	99	24	2,494

Fifty-eight patients have been admitted and discharged, and of these the average number of days' stay per patient during the past year was 68. The longest period any patient was detained during the year was 14 weeks and 6 days. This was an exceptional case, but 12 weeks' stay in a few instances has also occurred.

New Hospital Provision.

The Health Committee reported to the Council last March to the effect that W. E. Fletcher, Esq., M.B., one of the Inspectors of the Local Government Board, had visited the Hospital for the purpose of inspecting the pavilion erected in 1895 at a total cost of £1,179, for which a loan had been sought, and that he had been accompanied by Councillors Fisher and Platt, and your Medical Officer and Surveyor. The Inspector also visited the site of the proposed Smallpox Hospital and expressed his intention of making representations to the Local Government Board with a view to expediting their sanction to the loans for the boundary wall to that site and for £2,200 for the extension of the administrative block (concerning which he held an enquiry in March, 1898), upon certain conditions referred to in my last annual report. The Committee recommended that these conditions be complied with, which decision was approved by the Council, and sanction for these loans was afterwards received. The enlargement of the administrative block, including additional accommodation for the nurses, has been nearly completed, and when finished will add greatly to the comfort and welfare of the staff, and the efficiency of the Hospital.

The site of the new Smallpox Hospital of five acres, situated a quarter of a mile beyond the present Fever Hospital in Oscott Lane, has been surrounded with a brick wall 6 feet 6 inches high, the pathways laid out, and two belts of forest trees planted. In September last, with the sanction of the Chairman of your Health Committee (Sidney Fisher, Esq., C.C.), your Surveyor and I met by appointment Dr. F. H. Parsons, Assistant Medical Officer to the Local Government Board, and Mr. Gordon Smith, the Board's Architect, at Whitehall, London, and submitted preliminary plans for guidance and advice prior to the preparation of more elaborate plans by your Surveyor, a procedure which, I hope, will save the Council much expense and loss of time when the plans, which are in course of preparation, are finally submitted to the Local Government Board for approval.

I have added to this report the particulars which Mr. Treadaway, the Superintendent of the Night-soil Department, has furnished concerning the work done in his department, and you have already received printed copies of a report from Mr. Bolt, as to the work done in the Inspector of Nuisances' department.

During my recent illness, you appointed R. Hill Norris, M.D., J. P., to act as deputy Medical Officer of Health and Medical Attendant at the Fever Hospital. I have to acknowledge his valuable assistance, and his work is included with mine in this report. I have also to acknowledge the encouraging way in which my suggestions have been received by the Health Committee, and to thank the Council for the kindness and consideration shown me during my illness, due to an unfortunate inoculation from a scarlet fever patient during an operation at the Hospital.

I remain,

Yours obediently,

FRANCIS H. MAY.

February, 1900.

DEATHS REGISTERED IN ASTON MANOR. CLASSIFIED ACCORDING TO
DISEASES AND AGES.

1899.	0-1 Year.	1-5	5-15	15-25	25-45	45-65	65 & Up- wards	Total	
								1899	1898
I.—Specific Febrile, or Zymotic Diseases.									
MIASMATIC DISEASES.									
Smallpox	—	—	—	—	—	—	—	—	—
Measles	4	7	—	—	—	—	—	11	27
Scarlet Fever	—	1	1	—	—	—	—	2	3
Typhus Fever	—	—	—	—	—	—	—	—	—
Whooping Cough	7	20	4	—	—	—	—	31	11
Diphtheria (Membranous Croup)..	—	10	9	—	—	—	—	19	8
Continued Fever	—	—	—	—	—	—	—	—	—
Enteric or Typhoid Fever	—	2	5	13	3	4	—	32	16
Influenza	3	3	1	1	3	1	6	13	5
Other Miasmatic Diseases	—	—	—	—	—	—	—	—	—
DIARRHEAL DISEASES.									
Simple Cholera	—	—	—	—	—	—	—	—	—
Diarrhœa	144	20	—	—	—	3	3	170	134
Gastro-enteritis	51	6	—	—	—	—	—	57	34
Dysentery	2	—	—	—	1	—	—	3	—
VENEREAL DISEASES.									
Syphilis	2	—	—	—	—	—	—	2	2
Gonorrhœa, Stricture of Urethra ..	—	—	—	—	—	—	—	—	—
SEPTIC DISEASES.									
Erysipelas	—	—	—	—	—	—	1	1	2
Pyæmia, Septicæmia	1	—	—	—	—	—	—	1	—
Puerperal Fever	—	—	—	—	—	—	—	—	2
II.—Parasitic Diseases.									
Thrush and Vegetable Parasitic Diseases	2	—	—	—	—	—	—	2	1
Worms, Hydatid	—	—	—	—	—	—	—	—	—
III.—Dietetic Diseases.									
Want of Breast Milk, Starvation ..	1	—	—	—	—	—	—	1	—
Scurvy	—	—	—	—	—	—	—	—	—
Chronic Alcoholism, Delirium Tremens...	—	—	—	—	4	4	—	8	8
IV.—Constitutional Diseases.									
Rheumatic Fever, Rheumatism	—	—	2	2	1	2	—	7	7
Gout	—	—	—	—	1	—	—	1	1
Rickets	—	2	—	—	—	1	—	3	7
Cancer, Malignant Disease	—	—	1	1	8	23	24	62	56
Tabes Mesenterica	3	3	2	—	—	—	—	8	11
Tubercular Meningitis, Hydrocephalus	9	6	3	—	—	—	—	18	15
Phthisis	—	—	4	18	37	13	1	73	84
Other Forms of Tuberculosis, Scrofula..	2	1	2	2	4	1	—	12	11
Anæmia, Chlorosis, etc.	—	—	—	1	—	—	—	1	—
Diabetes Mellitus	—	—	—	—	—	3	—	3	6
Other Constitutional Diseases	—	1	1	—	—	—	1	3	—
V.—Developmental Diseases.									
Premature Birth	43	—	—	—	—	—	—	43	57
Atelectasis	5	—	—	—	—	—	—	5	1
Congenital Malformations.. .. .	6	—	—	—	—	—	—	6	6
Old Age	—	—	—	—	—	3	43	46	45
VI.—Local Diseases.									
DISEASE OF NERVOUS SYSTEM.									
Inflammation of Brain or Membranes ..	14	7	—	—	—	2	1	24	36
Apoplexy, Softening of Brain, Paralysis	—	—	—	—	6	7	27	40	58
Insanity, Paralysis of the Insane	—	—	—	—	1	—	—	1	—
Epilepsy	—	1	—	—	1	3	—	5	3
Convulsions, Eclampsia	20	3	—	—	—	—	—	23	44
Laryngismus Stridulus (Spasm of Glottis)	2	—	—	—	—	—	—	2	2
Disease of Spinal Cord, Paraplegia ..	—	—	—	—	2	—	1	3	—
Other Diseases of Nervous System	—	—	—	—	1	2	1	4	7
DISEASES OF CIRCULATORY SYSTEM.									
Pericarditis	—	—	—	—	—	—	—	—	3
Valvular Diseases of Heart	—	—	1	5	3	14	2	25	15
Syncope	—	—	—	—	3	5	4	12	9
Other Diseases of Heart	—	—	—	3	10	18	14	45	45
Aneurism	—	—	—	—	1	1	—	2	—
Embolism, Thrombosis	—	—	—	1	—	—	—	1	1
Other Diseases of Blood Vessels.. ..	—	—	—	—	—	—	—	—	3
Carried over.. .. .	321	93	36	47	95	120	129	841	736

DEATHS REGISTERED IN ASTON MANOR. CLASSIFIED ACCORDING TO
DISEASES AND AGES.—*Continued.*

1899.	0-1 Year.	1-5	5-15	15-25	25-45	45-65	65 & Up- wards	Total.	
								1899	1898
Brought over	321	93	36	47	95	120	129	841	786
DISEASES OF RESPIRATORY SYSTEM.									
Laryngitis	—	1	—	—	—	1	—	2	2
Croup	1	—	—	—	—	—	—	1	2
Emphysema, Asthma	—	—	—	—	—	—	1	1	2
Bronchitis	53	18	1	2	7	29	30	140	140
Pneumonia	19	19	3	3	11	11	4	70	76
Pleurisy	—	1	—	1	—	2	—	4	1
Other Diseases of Respiratory System ..	1	—	—	—	1	2	—	4	3
DISEASES OF DIGESTIVE SYSTEM.									
Dentition	—	—	—	—	—	—	—	—	—
Sore Throat, Quinsy, Tonsilitis	—	—	—	—	—	—	—	—	—
Diseases of Stomach	6	—	—	1	—	1	1	9	6
Enteritis	2	—	2	—	—	1	—	5	5
Obstructive Diseases of Intestines ..	3	—	—	—	1	2	1	7	8
Peritonitis	—	—	—	1	1	2	1	5	6
Ascites	—	—	—	—	—	—	—	—	—
Cirrhosis of Liver	—	—	—	—	4	5	1	10	16
Jaundice, and other Diseases of Liver ..	1	1	—	—	—	—	1	3	8
Other Diseases of Digestive System ..	—	—	—	—	—	—	—	—	1
DISEASES OF URINARY SYSTEM.									
Nephritis	—	—	1	2	3	8	2	16	10
Bright's Disease, Albuminuria	—	1	—	—	4	5	—	10	7
Disease of Bladder or of Prostate ..	—	—	—	—	—	2	1	3	2
Other Diseases of the Urinary System ..	—	—	—	—	—	2	1	3	1
DISEASES OF REPRODUCTIVE SYSTEM.									
Of Male Organs	—	—	—	—	—	—	—	—	—
Of Female Organs	—	—	—	—	—	—	—	—	—
Abortion, Miscarriage	—	—	—	—	—	—	—	—	—
Puerperal Convulsions	—	—	—	—	—	—	—	—	2
Placenta Prævia, Flooding	—	—	—	1	2	—	—	3	—
Other Accidents of Childbirth	1	—	—	—	3	—	—	4	2
DISEASES OF BONES AND JOINTS.									
Caries, Necrosis	—	—	1	—	—	—	—	1	—
Arthritis, Ostitis, Periostitis	—	—	—	—	—	—	—	—	—
DISEASES OF INTEGUMENTARY SYSTEM.									
Carbuncle, Phlegmon Cellulitis	—	—	—	—	—	—	—	—	—
Other Diseases of Integumentary System	1	—	—	—	—	—	—	1	—
VII.—Deaths from Violence.									
Fractures and Contusions	—	—	1	—	—	1	—	2	4
Cut, Stab	—	—	—	—	—	—	—	—	—
Burn, Scald	—	—	—	—	—	—	1	1	—
Poison	—	—	—	—	—	—	—	—	—
Drowning	—	1	2	—	—	—	—	3	1
Suffocation	8	—	—	—	—	—	—	8	11
Otherwise	—	—	1	—	—	1	—	2	5
Homicide	—	—	1	—	—	—	—	1	1
Suicide	—	—	—	1	1	—	—	2	15
VIII.—Deaths from Ill-defined and not Specified Causes.									
Dropsy	—	—	—	—	—	—	—	—	2
Debility, Atrophy, Inanition	31	—	—	—	—	—	—	31	43
Marasmus	39	3	—	—	—	—	—	42	45
Mortification	1	—	—	—	—	—	1	2	1
Abscess	—	—	—	—	—	1	—	1	—
Hæmorrhage	—	—	—	—	—	—	—	—	—
Sudden Death (cause not ascertained)	—	—	—	—	—	—	—	—	—
Other not Specified or Ill-defined Causes	1	—	—	—	1	—	—	2	—
Total	489	138	49	50	134	196	175	1240	1214

SUMMARY OF THE WORK OF THE NIGHT-SOIL DEPARTMENT AND OF DISINFECTION DURING 1899
AND PREVIOUS TEN YEARS.

Year.	DAY WORK. Dry Ashpits, Ash Tubs, and Refuse Tubs.				NIGHT WORK. Ashpits and Privies.		Total No. of Tons consumed in Destructor.	Total No. of Loads removed.	Gross Amount of Sales of Night-soil. £	Disinfection of Bedding.	
	No. of emptyings of dry Ashpits	No. of Loads removed from dry Ashpits.	No. of emptyings of Ash Tubs and Refuse Tubs	No. of Loads removed from Ash Tubs	No. of Middens emptied.	No. of Cart Loads removed.				No. of Lots of Bedding, etc., disinfected	No. of Articles disinfected.
1899	7,775	7,711	9,097	331	9,984	14,033	15,352	22,075*	£ 138	471	5,251
1898	7,044	6,777	7,012	254	10,662	14,121	14,391	21,152*	196	464	5,488
1897	6,801	6,887	7,378	275	11,154	14,968	15,251	22,130*	269	682	8,307
1896	6,579	5,426	6,309	282	11,026	13,696	14,763	19,404	270	1,031	12,677
1895	5,531	5,670	6,472	317	10,940	14,704	12,760	20,691	310	532	8,323
1894	4,573	4,080	6,072	289	10,948	14,511	—	18,880	385	497	9,317
1893	4,438	3,965	5,050	295	11,280	14,868	—	19,128	396	539	8,912
1892	4,283	4,372	5,686	343	10,698	16,426	—	21,141	445	471	7,001
1891	2,791	3,516	4,384	347	10,428	17,125	—	21,583	482	381	7,425
1890	2,219	3,128	3,742	316	10,004	16,708	—	21,202	528	478	8,721
1889	1,185	1,766	2,880	288	10,357	17,120	—	19,174	520	248	5,063

*Total Tonnage, 1897—23,669; 1898—22,311; 1899—23,838.

A. TREADAWAY, *Superintendent*

INDEX.

Bacteriological Examination	11	Measles	8
Bakehouses	22	Membranous Croup	9
Births	4	Mortuary	19
Dairies, Cowsheds, and Milkshops	23	Night-soil Removal	30
Deaths	4	Notification	6
,, Classified	27, 28	Nuisances	20, 29
,, Uncertified	18	Offensive Trades	21
Death Rates	5	Overcrowding	23
,, Special	5	Phthisis	14
Destructor	21	Population	3
Diarrhœa	14	Prevention of Disease	6
Disinfection	18	Privy Accommodation	19, 20
,, Apparatus	18	Puerperal Fever	14
Diphtheria	9	Sanitary State of District	19
Erysipelas	14	Scarlet Fever	12
Gastro-enteritis	16	School Closing	8, 9, 10
House Accommodation	4	Slaughterhouses	22
,, Inspection	19	Smallpox	14
Houses, Back-to-back	4	Sites and Buildings	21
Hospital, Infectious	23	Summary of Work Done	29
Infectious Diseases	6—17	Typhoid Fever	16
Influenza	14	Vaccination	18
Inquests	18	Water Closets	19
Isolation	12, 23	Whooping Cough	9
		Workshops	22
		Zymotic Mortality	5

